The development and validation of a thinking maps-aided problem-based learning module for physical science theme of year 5 science

Abstract

The main objective of this study is to explain about the development and validation of a Thinking Maps-aided Problem-Based Learning module for Year 5 Science subject of Physical Science Theme (energy, light, electricity and heat) which is less mastered by the students. The development of this module was based on ADDIE instructional design model that is the basis of other instructional design models. ADDIE model consists of five phases, namely analysis, design, development, implementation and evaluation. Four experts were involved in this study; a Malaysia public university lecturer, a director of Malaysia Regional Centre for Education in Science and Mathematics, a primary school science pedagogy lecturer at the Institute of Teacher Education, a Primary School Science's Excellent Teacher for the purpose of content validity and a linguist to perform face validity in terms of the use of language in the module. The findings of the expert panel evaluation show excellent module validity. The module prototype has been tested in a pilot study which involved 30 students from Year 5 at a primary school in Tawau, Sabah. The findings of this study show that the total value of the module reliability is high (Cronbach's Alpha = .96). This describes that the developed module has high internal consistency and is suitable to be used in the process of teaching and learning of Year 5 Science for the topics in Physical Science theme. Therefore, this study suggests that the developed module can be used as a teaching aid for topics in Physical Science theme of Science Year 5.